USER MANUAL

Sweetlight FR-252 MK2

DMX-controlled RGB 3-Segment LED Batten

Sweetlight®

Quality Products

■ Introduction

Dear customer,

congratulations on the purchase of this quality item and the trust having been put in us with this decision. To take full advantage of all possibilities and for your own safety and the safety of your environment, please read these operating instructions carefully before you start using the unit.

■ Security advice before use

Warning: Read this section carefully before installing, powering, operating, cleaning or servicing this product!

The following symbols are used to identify important safety information in this manual:

DANGER!
Safety hazard. Risk of injury or death.

WARNING!
Hazardous voltage. Risk of severe or fatal electric shock.

WARNING!
Fire hazard.

WARNING!
Read manual before installation and operation.

General advice:

1. Read this manual completely before using the product.
2. Keep this manual in your records for future reference.
3. Follow all instruction printed in this manual, otherwise warranty may be void.
4. Follow all printed security advice on the product itself. The lighting flash with arrowhead within an equilateral triangle makes you aware of non-insulated AC mains voltage inside the unit. The exclamation mark within an equilateral triangle makes you aware of important operating and maintenance instructions in the literature attached to this product.
5. Take care of enough distance between this product and sources of hum and noise like electric motors and transformers.
6. Carry this product with greatest care. Punches, big forces and heavy vibration may damage this product mechanically.
7. The manufacturer takes no responsibility for injury or damage caused by not following the safety precautions and instructions printed in this manual.

Warning! Class 1M LED product.

1. Do not look into the beam from a distance of less than 40 cm (16 inches).

2. Do not stare into the beam for extended periods at a short distance.
3. Do not view the beam directly with optical instruments such as magnifiers.

Protection from electric shock:

1. Do not connect the AC power plug to the unit before assembly has been completed.
2. Only connect this unit to a mains socket outlet with protective earth connection, ground-fault (earth-fault) protection and overload protection.
3. Where the mains plug or an appliance coupler is used as a disconnect device, the disconnect device shall remain readily operable.
4. To pull the AC Cord out of the wall outlet or the unit's AC socket, never pull the cable itself, but only the AC plug.
5. Disconnect the unit from AC supply by pulling the AC plug out of the wall outlet or the unit's AC socket before any kind of cleaning on the product. Use smooth and dry cloth only for cleaning. Check all connection cables before reconnecting the unit.
6. Do not expose this unit to any dripping or splashing liquids, and do not place objects filled with liquids, such as vases, on the unit. Do not operate this unit near to open water or in high humidity.
7. Choose the position of the AC cord according to the lowest risk of damage by foot steps or by squeezing it. Take especially care of the AC cord outlet on the unit as well as the AC plug and wall outlet at the other end of the cable.
8. Do not open the unit for service purpose, as there are no user-serviceable parts inside. Warranty will be void in any case of unauthorized service by the user or other not authorized persons.

Protection from fire:

1. Take care of not placing the unit near sources of heat (e.g. powerful amplifiers, fog machines).
2. Allow at least about 6" (15cm) between this unit and other devices or a wall to allow for proper cooling.
3. Be sure this fixture is kept at least 0.5m away from any flammable materials (decoration etc.).
4. Do not stick filters, masks or other materials directly on the LEDs or the LED cover screen.
5. Take always care of sufficient air convection in the unit's environment to avoid overheating, especially when mounting in a closed environment. Make sure air convection slots are not blocked. Do not operate this unit in environmental temperatures exceeding 35 degrees Celsius.
6. Check the total maximum power of your AC wall outlet if you

connect several units to one wall outlet and avoid any overloading.

Protection from injury and damage:

1. Never use any accessories or modifications not authorized by the manufacturer of this unit.
2. Choose a location for operation where the unit is protected from vibration and where a fixed mounting position is provided. In case of overhead-mounting, follow appropriate rigging rules and your country's regulations for rigging safety. See appendixes if any.
3. Before plugging the AC cord in the wall outlet, check whether the AC mains voltage and frequency is the same as this product is specified for. Whenever your AC plug should not match the wall outlet, contact you dealer immediately.
4. If fluids have spilled into the unit or small parts have intruded the unit, immediately switch off the unit and hand it over to the authorized service for a security check.
5. Disconnect the unit from AC supply by pulling the AC plug out of the wall outlet or the unit's AC socket during a thunder-storm in order to avoid any damage on the unit due to AC voltage peaks.
6. In cause of not correct function of this unit or damaged AC cord or other damaged parts, pull immediately the AC plug out of the wall outlet and hand the unit over to the authorized service for a security check.
7. To meet all aspects of functionality and security during maintenance work to be preformed on this unit, all parts should be replaced by genuine spare parts. Consequently, take care of your dealer or maintenance company to be authorized by the manufacturer.

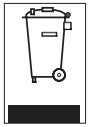
■ Health advice

This unit produces and absorbs electromagnetic radiation. The strength of radiation and the sensitivity for disturbing interference matches the CE and FCC requirements. A corresponding sign is printed on the backside of the unit. Any change or modification may affect the behavior of the unit concerning electromagnetic radiation, with the CE requirements eventually not to be met any more. The manufacturer takes no responsibility in this case.

■ Functional advice

This unit is immune to the presence of electromagnetic disturbances – both conducted and radiated - up to a certain level. Under peak conditions, the unit is classified to show a "class C" performance criteria and may encounter temporary degradation or loss of function which may need manual help to recover. In such case, disconnect the AC power from the unit and reconnect it again to recover.

■ Environmental advice



This unit is build to conform to the ROHS standards and the WEEE directive 2002/96/EC of the European Parliament and of the Council of the European Union. Under these regulations, the product shall not be discarded into regular garbage at the end of its life, but shall be returned to authorized recycling stations.

■ Unpacking

Please check that the box contains the following items:

Main parts: 1 pcs. Sweetlight FR-252 MK2 main unit
1 pcs. mains cable
1 pcs. operation manual

If any part is missing, please contact your dealer immediately for replacement.

■ Getting started: choosing a location

Risk of fire: The Sweetlight FR-252 MK2 has been designed to work in dry indoor environments at environmental temperatures up to 35 degrees Celsius. For proper operation, the unit must be operated with unobstructed air convection to its outside metal case.

Do not:

- Operate the Sweetlight FR-252 MK2 in environments with more than 35 degrees environmental temperature or more than 75% relative humidity.
- Operate the Sweetlight FR-252 MK2 in any closed environment smaller than 10cbm, unless forced air convection is provided.

■ Getting started: secure mounting

The Sweetlight FR-252 MK2 can be mounted in various ways:

Floor standing operation

- Turn the brackets to the lower side of the unit.
- Place the unit in a secure position where it can neither be touched by anyone or could possibly become an objective for anyone to stumble.
- Make sure to comply with cooling requirements of the used power supply if any.

Hanging/Rigging, ceiling-mounted operation

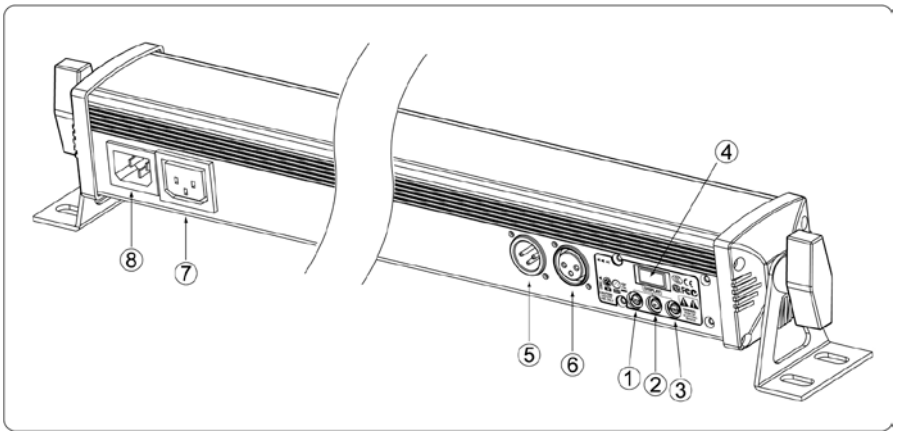
Risk of injury: Overhead mounting requires extensive experience, including among others calculating working load limits, good knowledge of the installation material being used, and periodic safety inspection of all installation material and the unit. If you lack such qualifications, do not attempt the installation yourself. Improper installation can result in body injury. Be sure to complete all rigging and installation procedures before applying power to the unit.

- The unit should be installed out of reach of people and outside areas where persons may walk by or be seated.
- Make sure that the installation area can hold a minimum point load of 10 times the device's weight.
- In fixed installations, fix the unit with self-locking screws/nuts to the mounting point.
- When mounting the unit to truss be sure to secure an appropriately rated clamp to the hanging yoke using a M10 screw fitted through the center hole of the hanging yoke.
- Where required, secure the installation with an appropriate safety cable. Always use a certified safety cable that can hold 12 times the weight of the device when installing the unit. This secondary safety attachment should be installed in a way that no part of the installation can drop more than 20cm if the main attachment fails.
- Never stand directly below the device when mounting, removing, or servicing the fixture. Make sure the area below the installation place is free from unwanted persons during rigging, de-rigging and servicing.
- The operator has to make sure that the safety-relating and machine-technical installations are approved by an expert before using them for the first time. The installations should be inspected every year by a skilled person to be sure that safety is still granted.
- Make sure to comply with cooling requirements of the used power supply if any.

■ Getting started: making AC supply connections

Risk of fire / Safety risk
The Sweetlight FR-252 MK2 has an AC outlet that is designed to carry loads of no more than 8A. Do not connect any high-power devices such as audio power amplifiers, fog machines etc. to this outlet. Make sure that all connected devices in a chain fed by the first device do not exceed a maximum of 8A current consumption. All units must be properly and separately earthed.

■ Operation



User interface overview:

1 MODE selection button
2 UP-Button
3 DOWN-Button
4 Display showing the Mode, DMX-address, etc.
5 DMX input
6 DMX output
7 AC output
8 AC input

Upon the user's choice, the unit can work stand-alone with fixed colors or may be controlled by external DMX-controllers. Available modes:

"A" Mode (Auto / DMX Master)

Press the MODE button (1) until the first digit on the display show "A", indicating operation in "A" mode. In this mode, a chaser or strobe preset can be displayed by the unit. Use the UP/DOWN buttons (2/3) to choose one of the 25 presets as shown in the list below.

In "A" mode, The unit does not receive any values from the DMX input but generates its own chases and creates related DMX values on the output with channels 001 to 012 so that similar units can show the same chase pattern if they are connected by DMX and set to "Slave Individual" mode "SLI" (see DMX channel assignment under "notes"). The level at all programs is 100%. The speed is set to 2Hz (120 BPM) with hard switching between the steps.

If you leave mode “A” for any reason and come back later into mode “A”, the unit will recall the last chosen color preset (even if the unit was switched off in between). The factory default is A10. Hence switching on the unit for the first time directly gives a light output and the user then may choose any other pattern out of the following:

A10 Chase 1 with Mood 0 ….. A17 Chase 1 with Mood 7
A20 Chase 2 with Mood 0 ….. A27 Chase 2 with Mood 7
A30 Chase 3 with Mood 0 ….. A37 Chase 3 with Mood 7
A40 all white strobe (16 Hz)
A41 all red strobe (16 Hz)
A42 all green strobe (16 Hz)
A43 all blue strobe (16 Hz)

“CI“ Mode (Colour Individual Preset Mode)

Press the MODE button (1) until the first two digits on the display show “CI”, indicating operation in “CI” mode. In this mode, a combination of different colours for the three sections of the LED panel can be chosen as a static preset. Use the UP/DOWN buttons (2/3) to choose one of the 13 color presets as shown in the list below. Changing the setting becomes effective directly. The output level us maximum.

In “CI” mode, the unit does not receive any values from the DMX input but generates its own set of mixed colours for the three LED panel section. It creates related DMX values on the output with channels 001 to 012 so that similar units can show the same colour if they are connected by DMX and set to “Slave Individual” mode “SLI” (see DMX channel assignment under “notes”).

If you leave mode “CI” for any reason and come back later into mode “CI”, the unit will recall the last chosen color preset (even if the unit was switched off in between).

Display	Section 1	Section 2	Section 3
CI0	OFF	OFF	OFF
CI1	Red	Green	Red
CI2	Green	Red	Green
CI3	Blue	Red	Blue
CI4	Red	Blue	Red
CI5	Green	Blue	Green
CI6	Blue	Green	Blue
CI7	Green	Orange	Green
CI8	Lavender	Frog	Lavender
CI9	Pink	Turquoise	Pink

“C” Colour Mode

Press the MODE button (1) until the first digit on the display shows “C”, indicating operation in “C” mode. In this mode, one single color for all three sections of the LED

panel can be chosen as a static preset. Use the UP/DOWN buttons (2/3) to choose one of the 13 color presets as shown in the list below. Changing the setting becomes effective directly. The output level us maximum.

In “C” mode, the unit does not receive any values from the DMX input but generates related DMX values on the output according to the selected color, so that further units can show the same behaviour if they are connected by DMX signal cables and set to Slave Mode “SLA”.

If you leave mode “C” for any reason and come back later into mode “C”, the unit will recall the last chosen color (even if the unit was switched off in between).

Available colour presets:

C 0	all off	C 7	Lime
C 1	Red	C 8	Orange
C 2	Green	C 9	Marine
C 3	Blue	C10	Frog
C 4	Yellow	C11	Lavender
C 5	Pink	C12	Candy
C 6	Turquoise	C13	White

“dI” Mode (DMX Individual Mode)

Press the MODE button (1) until the display shows “dI”, indicating operation in “dI” (DMX Individual) mode. Shortly after that, the display shows the DMX starting address. In this mode, the unit receives DMX values on a packet of twelve channels for individual DMX control of the 3 segments, and mirrors the received data on the DMX output. You can choose any DMX starting address by simply using the UP/DOWN buttons (2/3). The chosen DMX-address comes effective approximately 3 seconds later and will show up on the display (4) in alternation to the “dI”. This allows control of the unit by any external DMX signal. Once such signal is received, a LED on the lower right side of the “d” in the display indicates that a DMX signal is present. All settings are stored even when the device is switched off. Factory default = channel 001.

Addressing has hence to be done as follows:

001 first Device (ch1-12) *factory default*
013 second device (ch13-24)
025 third device (ch25-36) and so on.

The twelve channels control the unit as follows:

CH1: Segment 1/Red intensity
CH2: Segment 1/Green Intensity

CH3: Segment 1/Blue intensity
CH4: Segment 1/ value 000-127 = Master dimmer (overall weighting to the values received on CH1/2/3), Strobe off
value 128-227 = Strobe (128= slow / 227= max. speed 23 Hz)
value 228-255 = Master dimmer full on, Strobe off

CH5: Segment 2/Red intensity
Ch6: Segment 2/Green Intensity
CH7: Segment 2/Blue intensity
CH8: Segment 2/ value 000-127 = Master dimmer (overall weighting to the values received on CH1/2/3), Strobe off
value 128-227 = Strobe (128= slow / 227= max. speed 23 Hz)
value 228-255 = Master dimmer full on, Strobe off

CH9: Segment 3/Red intensity
Ch10: Segment 3/Green Intensity
CH11: Segment 3/Blue intensity
CH12: Segment 3/ value 000-127 = Master dimmer (overall weighting to the values received on CH1/2/3), Strobe off
value 128-227 = Strobe (128= slow / 227= max. speed 23 Hz)
value 228-255 = Master dimmer full on, Strobe off

“d” Mode (DMX Mode)

Press the MODE button (1) until the display shows “d”, indicating operation in “d” (DMX) mode. Shortly after that, the display shows the DMX starting address. In this mode, the unit receives DMX values on a packet of four channels for mutual DMX control of all 3 segments, and mirrors the received data on the DMX output. You can choose any DMX starting address by simply using the UP/DOWN buttons (2/3). The chosen DMX-address comes effective approximately 3 seconds later and will show up on the display (4) in alternation to the “d”. This allows control of the unit by any external DMX signal. Once such signal is received, a LED on the lower right side of the “d” in the display indicates that a DMX signal is present. All settings are stored even when the device is switched off. Factory default = channel 001. Setting are stored even if the device is switched off. The four channels control the unit as follows:

DMX channel	Value Range	Function
CH1	000-255	Out1 level
CH2	000-255	Out2 level
CH3	000-255	Out3 level
CH4	000-127	Master level
	128-227	Tact (128=slow / 227=max. speed 23 Hz)
	228-255	Master level full on, Tact off

Addressing has to be done as follows:

001 first device	(CH 1-4)	*factory default*
005 second device	(CH 5-8)	
009 third device	(CH 9-12)	
013 fourth device	(CH 13-16)	and so on.

“SLI” Mode (DMX Individual Slave)

Press the MODE button (1) until the display shows “SLI”, indicating operation in “SLI” (SLAVE INDIVIDUAL) mode. In this mode the unit is set to DMX-channel 001 in order to receive the DMX signal on 12 consecutive channels starting from 001 from a master-unit being in mode "CI" or “A”. Once such signal is received, a LED on the lower right side of the “C” in the display indicates that a DMX signal is present.

This mode can also be used for remotely controlling the whole unit with individual settings for the 3 segments if no specific DMX address is needed and channels 001-012 can serve as a default.

“SLA” Mode (DMX Slave)

Press the MODE button (1) until the display shows “SLA”, indicating operation in “SLA” (SLAVE) mode. In this mode the unit is set to DMX-channel 001 in order to receive the DMX signal on 4 consecutive channels starting from 001 from a master-unit being in mode "C". Once such signal is received, a LED on the lower right side of the “C” in the display indicates that a DMX signal is present.

This mode can also be used for remotely controlling the whole unit with same settings for all 3 segments if no specific DMX address is needed and channels 001-004 can serve as a default.

Display on/off

The display of the unit will turn off after 25 seconds of not receiving any user commands through the buttons 1/2/3. On the first hit of any button, the display will light up again; this first hit will not change any settings, only when you press any button after that, settings will be affected.

Key lock

Pressing the MODE button (1) for longer than 3 seconds locks all the buttons (1/2/3). The display shows “LOC” in alteration to the mode (changing every 2 seconds). Pressing the MODE button again for more than 3 seconds unlocks the button- and potentiometer-functions. Please note: If the display is in OFF-mode it will take approximately 25 seconds before the display switches off. It will be switched on again if any key is touched and will switch off again after 25 seconds if the keys are not unlocked by the procedure mentioned above.

Termination
To avoid interference the last unit of a DMX-chain should be terminated. Use a standard 120 Ohms XLR termination plug for DMX lines on the last device in a DMX bus chain.

Switch on condition

The unit always returns to the last mode before it was switched off. In DMX Slave “SLA” /”SLI”or DMX Mode “d”/”dI” all DMX values are cleared if power is switched off.

DMX signal drop condition

The device will retain the status that it was in before the DMX signal got lost, but potential tact settings will be automatically cleared.

■ Maintenance

This unit does not need regular maintenance. The internal circuit is protected by a 250V/2A slow-blow fuse 5x20mm fuse. If this fuse fails, this usually indicates an internal fault requiring servicing by a qualified engineer. The fuse shall only be replaced by a fuse of same specification, and the replacement has to be made by qualified personnel obeying applicable safety rules.

■ Technical data Sweetlight FR-252 MK2:

LEDs……..……252 pcs. 10mm LEDs (63 red – 108 green – 81 blue) in 3 segments
Dispersion angle……...30 degrees
Mains Input…… AC90-250V~ 50/60Hz
Power supply type……..switch mode
Power Consumption……...max. 20W
Fuse…….250V 2A T (slow blow, 5x20mm glass)
DMX connections……3 pin XLR (Male / Female)
Modulation Type…….Advanced Bit Angle Modulation (ABAM)
Control protocol.....DMX 512 (1990)
Dimensions (without brackets)…….L1064.00 x H64.00 x D66.00 mm
Weight ……1.93kg

■ Standards

This product complies with the following standards:
EU safety.....EN60598-1:2008, EN60598-2-1:1989
EU EMC.....EN55015: 2006 + A1:2007, EN61547:1995 + A1:2000
EU Harmonics EN61000-3-2:2006
EU Flicker …….EN61000-3-3:2008
US safety ……UL60065
US EMC……..FCC Part 15

This product meets both the EMC Directive 2004/108/EC and the Low Voltage Directive 2006/95/EC.